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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,844	03/22/2004	Takashi Izuta	P/1596-77	2467
2352 7590 06/21/2007 OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			EXAMINER DHINGRA, RAKESH KUMAR	
			ART UNIT 1763	PAPER NUMBER
			MAIL DATE 06/21/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/806,844

Applicant(s)

IZUTA, TAKASHI

Examiner

Rakesh K. Dhingra

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 April 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings are objected to because the replacement drawings for Figures 1, 3, 4 and 7, as forwarded now by the applicant depict reference number as “20” for the treating tank, whereas as per specification its reference number is “22” (page 9, lines 9, 10).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Response to Arguments

Applicant's arguments with respect to claims 9-16 have been considered and following comments are given.

Applicant has cancelled claims 9-12, and amended claim 13.

Accordingly claims 13-16 are now pending and active.

Applicant's clarification that heater block of Yoo can not be used as an immersible holding device because of exposed hot-wires 204 has been found persuasive. Accordingly the rejection is

withdrawn. However on further consideration a new ground of rejection is made over Kuroda et al in view of Uneo and a new reference (US Patent No. 6,174,371 – Iseki et al) since these references when combined read on claim 13 limitations. Accordingly claim 13 has also been rejected under 35 USC 103 (a) as explained below. Further, dependent claims 14-16 have also been rejected under 35 USC 103 (a) as explained below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 is indefinite because the limitation “controller further preheats said back plate” implies that controller is preheating the back plate whereas as per specification (page 18, lines 8, 9) controller controls pre-heating and movement of substrate holder. Thus this part of claim limitation is interpreted as “controller controls pre-heating of said back plate”

Applicant is invited to clarify.

Further, claims 14-16 are also rejected being dependent claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention

was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al (US PG PUB No. 2002/0153098) in view of Ueno et al (US Patent No. 5,421,905) and Iseki et al (US Patent No. 6,174,371).

Regarding Claim 13: Kuroda et al teach a substrate treating apparatus (Figures 3-14) for performing a predetermined treatment of a plurality of substrates as immersed in a solution, comprising:

a treating tank 30 for having the a treating solution stored therein;

a transferring apparatus 15 (substrate transport mechanism) comprising of left/right wafer chucks 20a, 20b and transferring/driving means 21, that transports the plurality of substrates;

a wafer guide 31 (substrate holding device) that holds the substrates received from said substrate transport mechanism and immerses the substrates in the treating solution stored in said treating tank; and

a control means 60 as per Figure 5 (controller) that controls the treatment of the substrates W by immersing said substrate holding device 31 holding the substrates in the treating solution stored in said treating tank;

wherein said substrate holding device 31 includes a plurality of holding rods 43a – 43c for holding the plurality of substrates W in vertical posture, and a support body 45 (back plate) supporting said holding rods in cantilever fashion (paragraphs 0040-0042, 0052-0062, 0065-0080). Claim limitation “heated treating solution” is an intended use limitation, and since the apparatus of prior art meets structural limitations of the claim, the same is considered capable of meeting this intended use limitation.

Kuroda et al do not teach the back plate having a heating device, and the controller further preheats the back plate by means of said heating device before the treatment of the substrates.

Ueno et al teach a wafer treating apparatus (Figure 1, 2, 9, 13) that includes a case 30 washing vessels 20, 21, 23, 24, a boat 32 and a wafer fork (substrate holding device with back plate) 41 that includes support rods (holding rods) 43 for holding substrates W and where the holding rods are supported in a cantilever fashion (Figure 9). Though Ueno et al do not teach wafer fork 41 having a heater, he teaches a IR heater (heating device) 52 that extends along support rods 43 (that are part of support assembly). Ueno et al also teach that orientation of IR heater 52 can be changed, implying that heater's location could be rearranged as per process related considerations. It would be obvious to dispose the heater 52 on the wafer fork 41 (back plate) to enable heat the support rods 43 more effectively through heat conduction from the wafer fork 41.

Therefore it would have been obvious to one of skills in the art at the time of the invention to use a heater in the back plate as taught by Ueno et al in the apparatus of Kuroda et al to enable fast drying of the substrates after cleaning.

Kuroda et al in view of Ueno et al do not teach the controller preheats the back plate by means of heating device before the treatment of the substrates.

Iseki et al teach a substrate treating apparatus (Figure 2) comprising:

A substrate treating main body 52, a support table 51 for supporting a substrate and where the support table is pre-heated heater 53 under the control of a temperature controller 71 and main controller 72 before treatment of substrates W (column 7, line 35 to column 9, line 40).

Therefore it would have been obvious to one of skills in the art at the time of the invention to use a heater in the back plate of substrate holding device as taught by Iseki et al in the apparatus of Kuroda et al in view of Ueno et al to enable pre-heat the back plate to avoid thermal shock to the wafers.

Regarding Claims 14,15: Kuroda et al teaches all structural limitations of the claims. The recited limitations regarding use of phosphoric acid and sulfuric acid as treating solutions, are functional limitations. Since the prior art apparatus meets all the structural limitations of the claims, the apparatus of prior art is capable of meeting these limitations, absent any criticality disclosed.

Regarding Claim 16: Kuroda et al teaches all structural limitations of the claims. The recited limitations regarding use of apparatus for etching treatment is an intended use limitation. Since the prior art apparatus meets all the functional limitations of the claims, the apparatus of prior art is capable of meeting these limitations, absent any criticality disclosed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rakesh K. Dhingra whose telephone number is (571)-272-5959. The examiner can normally be reached on 8:30 -6:00 (Monday - Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571)-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rakesh Dhingra



Parviz Hassanzadeh
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